

CLAIMS

What is claimed is:

1. An interposer for use in a semiconductor device package, comprising:
a substrate element; and
a slot formed through said substrate element, said slot including a first end configured to extend beyond an outer periphery of a semiconductor die upon assembly of the interposer with said semiconductor device and a second end including a laterally recessed area formed in only a portion thereof.
2. The interposer of claim 1, wherein said substantially planar substrate element comprises at least one of a resin, a plastic, silicon, an insulator-coated semiconductor, an insulator-coated material, and an electrically insulative material.
3. The interposer of claim 1, wherein said laterally recessed area is configured to receive at least a tip of a wire bonding capillary.
4. The interposer of claim 1, wherein said laterally recessed area is positioned to be aligned laterally adjacent a bond pad of a semiconductor die upon positioning the interposer over the semiconductor die, so as to be located laterally over a portion of an active surface of the semiconductor die located between the bond pad and an outer periphery of the semiconductor die.
5. The interposer of claim 4, wherein said laterally recessed area is configured to facilitate access to the bond pad of the semiconductor die by equipment for forming, positioning, or securing intermediate conductive elements.

6. A method for forming an opening through an interposer, comprising:
providing a substrate element;
forming a first hole through said substrate element;
forming a second elongated hole through said substrate element, said second hole being
continuous with said first hole, said second hole having a greater diameter than a diameter
of said first hole.

7. The method of claim 6, wherein said forming said first and second holes
comprises machining.

8. The method of claim 7, wherein said machining comprises drilling.

9. The method of claim 6, wherein said forming said first hole comprises forming an
elongated slot through said substrate element.

10. The method of claim 9, wherein said forming said second elongated hole
comprises increasing a width of a portion of said first hole.

11. The method of claim 6, wherein said forming said first hole comprises forming a
small hole in said substrate element.

12. The method of claim 6, wherein said forming said second elongated hole
comprises introducing a drill bit through a plane of said substrate element and moving said drill
bit along said plane as said drill bit intersects said plane.

13. The method of claim 6, wherein said providing comprises providing a substrate
element comprising at least one of a resin, a plastic, an insulator-coated semiconductor material,
an insulator-coated material, and an electrically insulative material.

14. A method for forming an interposer, comprising:
providing a substrate element; and
defining an elongate slot through said substrate element, a portion of at least one end of said elongate slot including a laterally recessed area.

15. The method of claim 14, wherein said providing comprises providing a substrate element comprising an etchable material.

16. The method of claim 15, wherein said defining comprises removing material of said substrate element in a location of said elongate slot.

17. The method of claim 16, wherein said removing comprises etching said substrate element.

18. A semiconductor device assembly, comprising:
a semiconductor die with a plurality of bond pads on an active surface thereof, at least one bond pad of said plurality being located adjacent an outer periphery of said semiconductor die;
and
an interposer positionable over said semiconductor die, said interposer including at least one elongate slot formed therethrough, said at least one elongate slot including an end with a laterally recessed area formed in a portion thereof, said laterally recessed area, upon positioning said interposer over said semiconductor die, exposing said at least one bond pad and at least a portion of an active surface located between said at least one bond pad and said outer periphery.

19. The semiconductor device assembly of claim 18, wherein said plurality of bond pads of said semiconductor die are arranged substantially linearly across a central region of said active surface.

20. The semiconductor device assembly of claim 18, wherein said laterally recessed area is configured to receive at least a portion of apparatus for forming, positioning, or securing an intermediate conductive element.

21. The semiconductor device assembly of claim 18, wherein said laterally recessed area is configured to receive at least a tip of a wire bonding capillary so as to facilitate electrical connection of said at least one bond pad to a corresponding contact pad on a surface of said interposer.

22. The semiconductor device assembly of claim 18, further comprising an intermediate conductive element extending between said at least one bond pad and a corresponding contact area on said interposer.

23. The semiconductor device assembly of claim 18, wherein said interposer is part of a strip comprising a plurality of physically connected interposers, each interposer of said plurality being configured to be assembled with a semiconductor die.

24. A method for forming a semiconductor device assembly, comprising:
providing a semiconductor die including bond pads on an active surface thereof, at least one of said bond pads being located proximate an outer periphery of said semiconductor die; and
securing an interposer to said active surface, said interposer including at least one opening formed therethrough so as to expose at least some of said bond pads through said interposer, said at least one opening including at least one laterally recessed area formed in a periphery of said at least one opening, said at least one laterally recessed area positioned so as to expose at least a portion of said active surface located between said at least one bond pad and said outer periphery.

25. The method of claim 24, further comprising electrically connecting said at least one bond pad to a corresponding contact area of said interposer.

26. The method of claim 25, wherein said electrically connecting comprises disposing an intermediate conductive element between said at least one bond pad and said corresponding contact area.

27. The method of claim 26, wherein said electrically connecting comprises introducing at least a portion of an apparatus that forms, positions, or secures said intermediate conductive element at least partially into said at least one laterally recessed area.

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